WHAT IS CLAIMED IS:

1. An iterative method for determining parameters for a forward error correction scheme for improving the quality of a data transmission, said method comprising the steps of:

(a) establishing a relationship between said parameters and a coding gain;

(b) initializing said coding gain to a minimum predetermined value;

(c) determining, based on said relationship between said parameters and said coding gain, an intermediate set of parameters for providing a preferred result for said coding gain;

(d) incrementing a value of said coding gain by a predetermined value and repeating said step (c) until said coding gain reaches a predefined maximum value, thereby determining a plurality of intermediate sets of parameters; and

(e) determining a preferred set of parameters from said plurality of intermediate sets of parameters, wherein said preferred set of parameters provides said forward error correction scheme with an optimal set of values for balancing a code length and an error rate of said data transmission.

2. A method as defined in claim 1, wherein said step (a) of establishing said relationship between said parameters and said coding gain comprises:

(a1) calculating said coding gain for a plurality of associated parameters; and

(a2) storing results of said step (a1) in a table.

3. A method as defined in claim 1, wherein said step (a) of establishing said relationship between said parameters and said coding gain comprises:

(a1) calculating said coding gain for a plurality of associated parameters; and

(a2) determining an equation that approximates all results from said step (a1).

4. A method as defined in claim 1, wherein said step (c) of determining said intermediate set of parameters comprises:

calculating a maximum number of bytes per symbol $B$ including said coding gain;

locating all parameters that satisfy said value of said coding gain; and

selecting, as said intermediate set of parameters, and using said maximum number of bytes per symbol $B$, a set of parameters that provides a best performance.

5. A method as defined in claim 4, wherein said best performance is defined by said set of parameters that yields a largest number of information bytes.

6. A method as defined in claim 1, wherein said step (e) of determining said preferred set of parameters comprises:

comparing all of said plurality of intermediate sets of parameters; and

selecting as said preferred set of parameters said intermediate set of parameters that provides a best performance.

7. A method as defined in claim 6, wherein said best performance is defined by said set of parameters that yields a largest number of information bytes.

8. A method as defined in claim 7, wherein said largest number of information bytes is compared with a maximum number of bytes $B_0$ had said forward error correction scheme not been implemented, for determining whether to use said forward error correction scheme.

9. A method as defined in claim 1, wherein said step (c) of determining said intermediate set of parameters is further based on external factors, wherein said external factors include delay and noise protection.

10. An iterative method for determining parameters for a forward error correction scheme for improving the quality of a data transmission, said method comprising the steps of:

(a) establishing a relationship between said parameters and a coding gain;

(b) initializing said coding gain to a minimum predetermined value;

(c) determining, based on said relationship between said parameters and said coding gain, an intermediate set of parameters for providing a preferred result for said coding gain;

(d) replacing a preferred set of parameters with said intermediate set of parameters if said intermediate set of parameters provides a better performance, wherein said

preferred set of parameters provides said forward error correction scheme with an optimal set of values for balancing a code length and an error rate of said data transmission; and

(e) incrementing a value of said coding gain by a predetermined value and repeating said steps (c) and (d) until said coding gain reaches a predefined maximum value.

11. A method as defined in claim 10, wherein said better performance is defined as a set of parameters yielding a larger number of information bytes.

12. A method as defined in claim 10, wherein said step (c) of determining said intermediate set of parameters comprises:

calculating a maximum number of bytes per symbol *B* including said coding gain;

locating all parameters that satisfy said value of said coding gain; and

selecting, as said intermediate set of parameters, and using said maximum number of bytes per symbol *B*, a set of parameters that provides a best performance.

13. A method as defined in claim 10, wherein said step (c) of determining said intermediate set of parameters comprises:

calculating a maximum number of bytes per symbol *B* including said coding gain; and

selectively skipping said step (d) when a value of said maximum number of bytes per symbol *B* is less than or equal to a previous value of said maximum number of bytes per symbol *B*.

14. A method as defined in claim 10, wherein said step (c) of determining said intermediate set of parameters comprises:

calculating a maximum number of bytes per symbol *B* including said coding gain;

selectively skipping said steps (d) and (e) when a value of said maximum number of bytes per symbol *B* is less than or equal to a previous value of said maximum number of bytes per symbol *B*.

15. An apparatus for determining parameters for a forward error correction scheme for improving the quality of a data transmission, said apparatus including a processor to implement processing including the steps of:

(a) establishing a relationship between said parameters and a coding gain;

(b) initializing said coding gain to a minimum predetermined value;

(c) determining, based on said relationship between said parameters and said coding gain, an intermediate set of parameters for providing a preferred result for said coding gain;

(d) incrementing a value of said coding gain by a predetermined value and repeating said step (c) until said coding gain reaches a predefined maximum value, thereby determining a plurality of intermediate sets of parameters; and

(e) determining a preferred set of parameters from said plurality of intermediate sets of parameters, wherein said preferred set of parameters provides said forward error correction scheme with an optimal set of values for balancing a code length and an error rate of said data transmission.

16. An apparatus for determining parameters for a forward error correction scheme for improving the quality of a data transmission, said apparatus including a processor to implement processing including the steps of:

(a) establishing a relationship between said parameters and a coding gain;

(b) initializing said coding gain to a minimum predetermined value;

(c) determining, based on said relationship between said parameters and said coding gain, an intermediate set of parameters for providing a preferred result for said coding gain;

(d) replacing a preferred set of parameters with said intermediate set of parameters if said intermediate set of parameters provides a better performance, wherein said preferred set of parameters provides said forward error correction scheme with an optimal set of values for balancing a code length and an error rate of said data transmission; and

(e) incrementing a value of said coding gain by a predetermined value and repeating said steps (c) and (d) until said coding gain reaches a predefined maximum value.

17. An apparatus as defined in claim 16, wherein said step (c) of determining said intermediate set of parameters comprises:

calculating a maximum number of bytes per symbol *B* including said coding gain;

locating all parameters that satisfy said value of said coding gain; and

selecting, as said intermediate set of parameters, and using said maximum number of bytes per symbol $B$, a set of parameters that provides a best performance.

18. An apparatus as defined in claim 16, wherein said step (c) of determining said intermediate set of parameters comprises:

calculating a maximum number of bytes per symbol $B$ including said coding gain; and

selectively skipping said step (d) when a value of said maximum number of bytes per symbol $B$ is less than or equal to a previous value of said maximum number of bytes per symbol $B$.

19. An apparatus as defined in claim 16, wherein said step (c) of determining said intermediate set of parameters comprises:

calculating a maximum number of bytes per symbol $B$ including said coding gain; and

selectively skipping said steps (d) and (e) when a value of said maximum number of bytes per symbol $B$ is less than or equal to a previous value of said maximum number of bytes per symbol $B$.

20. An apparatus for determining parameters for a forward error correction scheme for improving the quality of a data transmission, comprising:

first means for establishing a relationship between said parameters and a coding gain;

second means for initializing said coding gain to a minimum predetermined value;

third means for determining, based on said relationship between said parameters and said coding gain, an intermediate set of parameters for providing a preferred result for said coding gain;

fourth means for incrementing a value of said coding gain by a predetermined value and for repeating a function of said third means until said coding gain reaches a predefined maximum value, thereby determining a plurality of intermediate sets of parameters; and

fifth means for determining a preferred set of parameters from said plurality of intermediate sets of parameters, wherein said preferred set of parameters provides said forward

error correction scheme with an optimal set of values for balancing a code length and an error rate of said data transmission.

21. An apparatus for determining parameters for a forward error correction scheme for improving the quality of a data transmission, comprising:

first means for establishing a relationship between said parameters and a coding gain;

second means for initializing said coding gain to a minimum predetermined value;

third means for determining, based on said relationship between said parameters and said coding gain, an intermediate set of parameters for providing a preferred result for said coding gain;

fourth means for replacing a preferred set of parameters with said intermediate set of parameters if said intermediate set of parameters provides a better performance, wherein said preferred set of parameters provides said forward error correction scheme with an optimal set of values for balancing a code length and an error rate of said data transmission; and

fifth means for incrementing a value of said coding gain by a predetermined value and for repeating a function of said third means and a function of said fourth means until said coding gain reaches a predefined maximum value.

22. An apparatus as defined in claim 21, wherein said third means for determining said intermediate set of parameters comprises:

means for calculating a maximum number of bytes per symbol *B* including said coding gain;

means for locating all parameters that satisfy said value of said coding gain; and

means for selecting, as said intermediate set of parameters, and using said maximum number of bytes per symbol *B*, a set of parameters that provides a best performance.

23. An apparatus as defined in claim 21, wherein said third means for determining said intermediate set of parameters comprises:

means for calculating a maximum number of bytes per symbol *B* including said coding gain; and

means for selectively skipping said function of said fourth means when a value of said maximum number of bytes per symbol *B* is less than or equal to a previous value of said maximum number of bytes per symbol *B*.

24. An apparatus as defined in claim 21, wherein said third means for determining said intermediate set of parameters comprises:

means for calculating a maximum number of bytes per symbol *B* including said coding gain; and

means for selectively skipping said function of said fourth means and a function of said fifth means when a value of said maximum number of bytes per symbol *B* is less than or equal to a previous value of said maximum number of bytes per symbol *B*.